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Dushanbe, May 16 - 18



Human Capital Policy for Development

Norbert Schady

Chief Economist for Human
Development



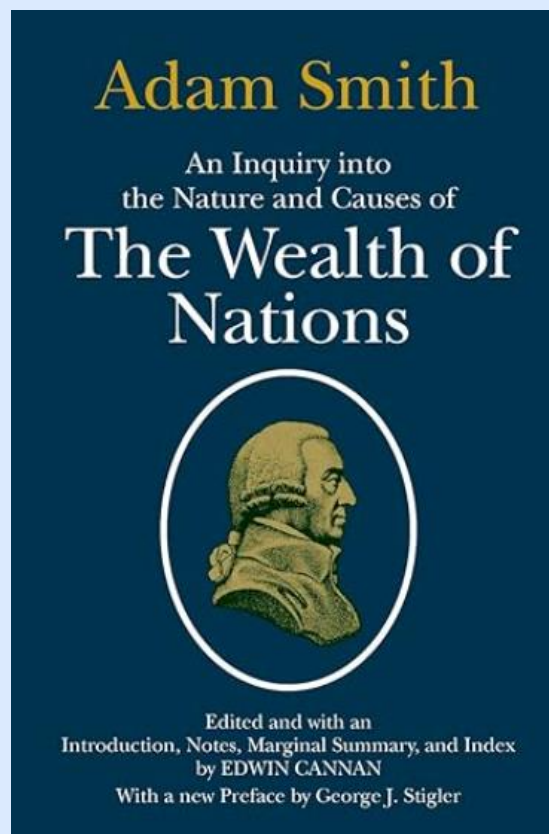


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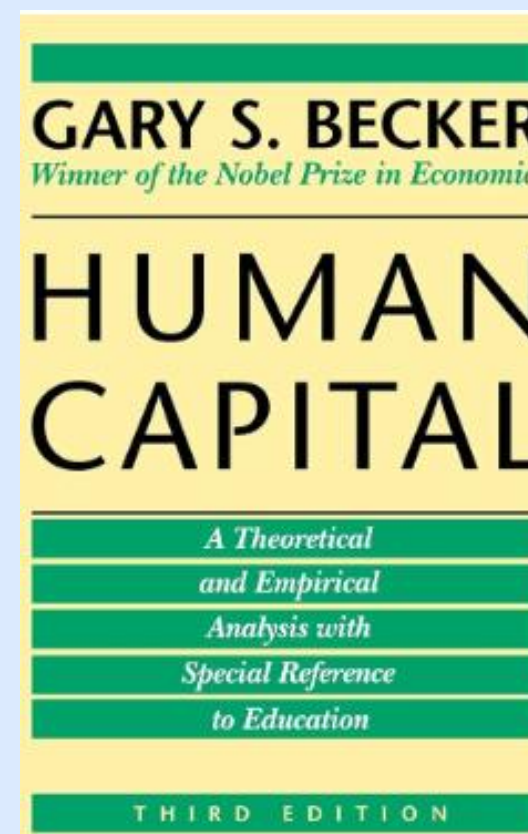


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Human capital has been at the center of economics since its inception



“The acquisition of ... talents during ... education, study, or apprenticeship is capital in [a] person. Those talents [are] part of his fortune [and] likewise that of society” (Smith, 1776, cited in Goldin, 2016).

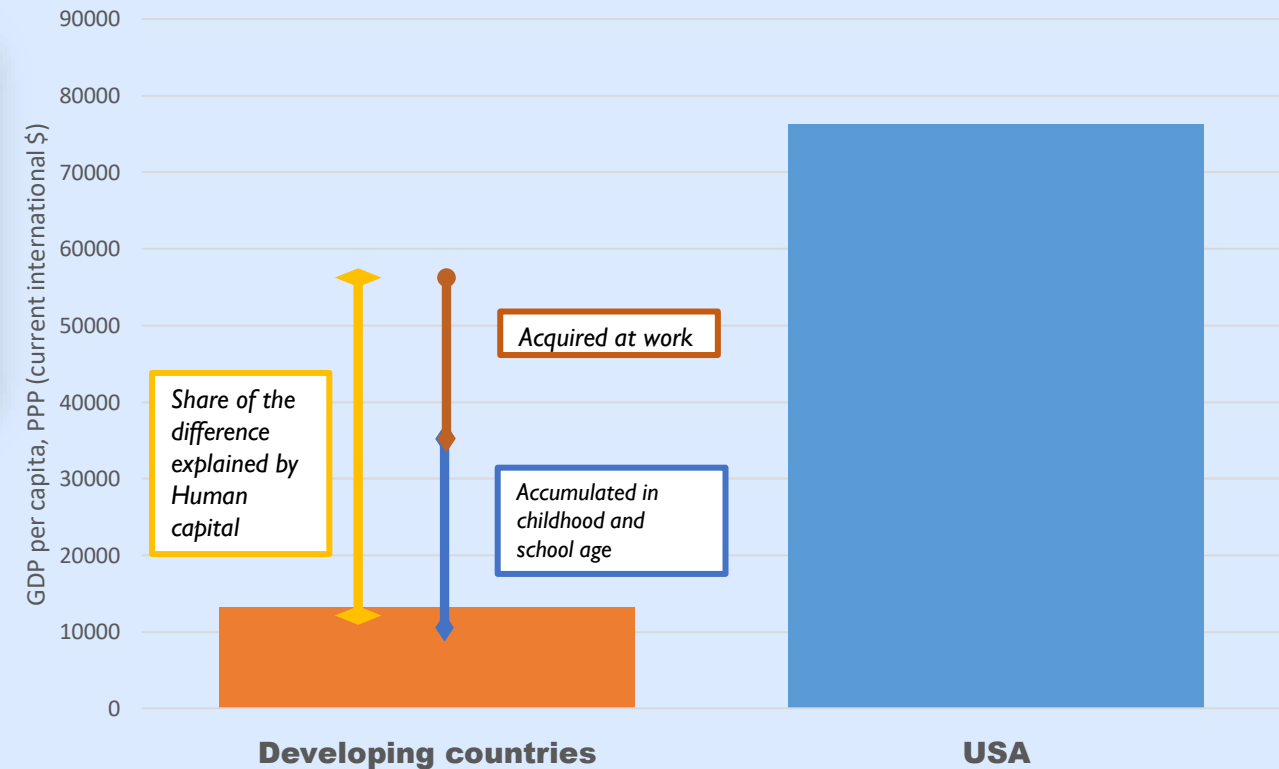


Human capital refers to "activities that influence future ... income by increasing resources in people" (Becker, 1994).



Human capital is key to understanding productivity differences across and within countries

Average GDP per capita



American Economic Journal: Macroeconomics 2023, 15(3): 191–223
<https://doi.org/10.1257/mac.20210002>

Human Capital Accumulation at Work: Estimates for the World and Implications for Development

By REMI JEDWAB, PAUL ROMER, ASIF M. ISLAM, AND ROBERTO SAMANIEGO

“Education and experience account for about one-third each of the income gap between developing and developed economies.”

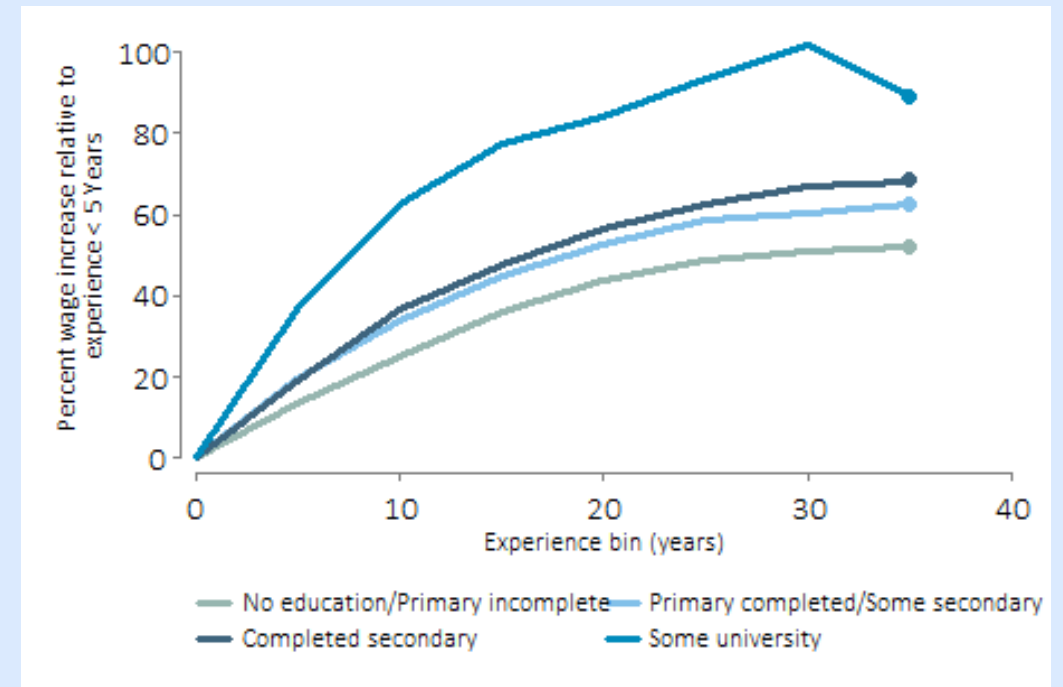


Human capital is key to understanding productivity differences across and within countries



“Overall, the best evidence suggests that human capital accounts for at least one-third of the variation in labor earnings within countries, and at least one-half of the variation in earnings per worker across countries.”

Returns to human capital in Brazil



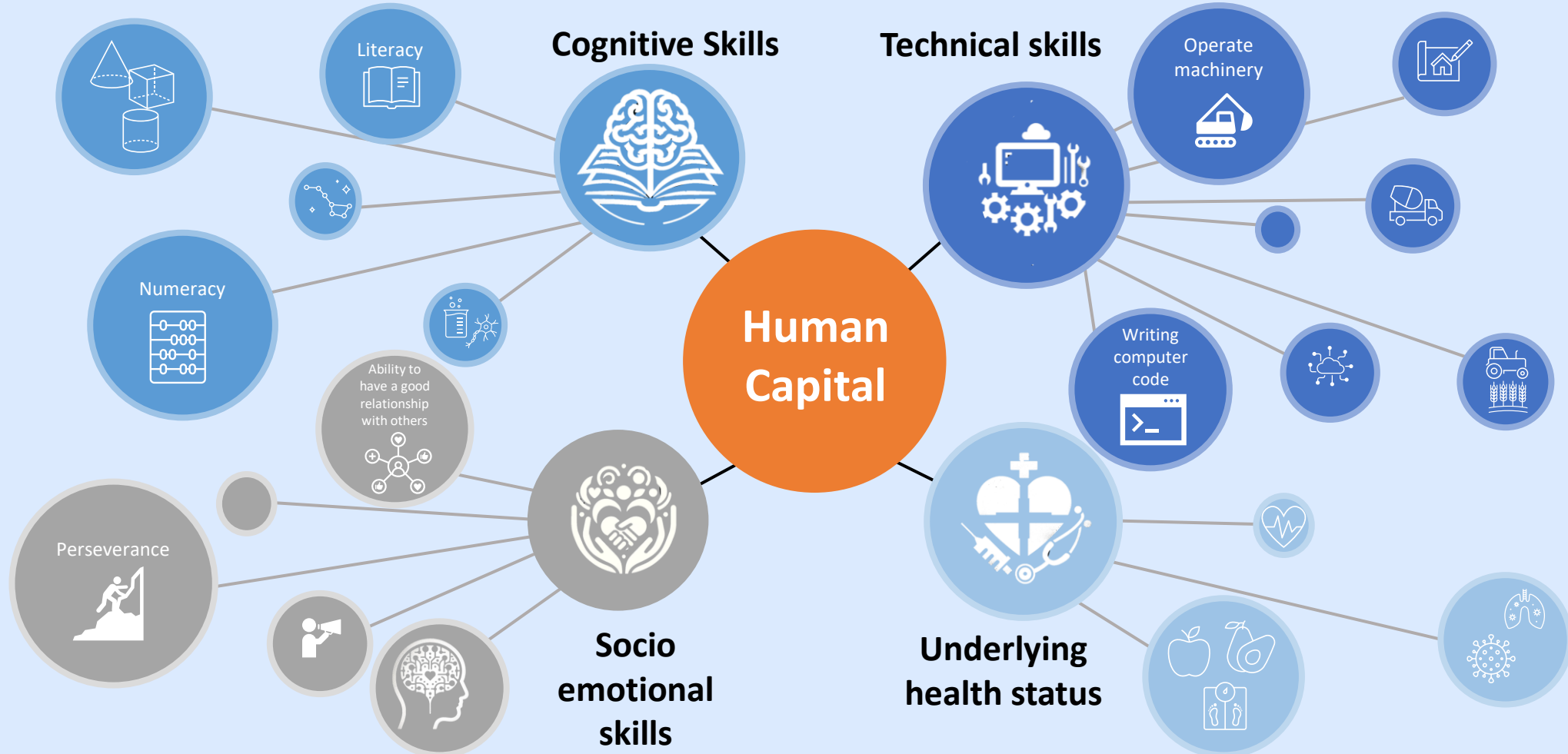


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Human capital is multidimensional





Two approaches to analyzing human capital accumulation:

The life cycle approach

Identifying the places (arenas) where human capital is built

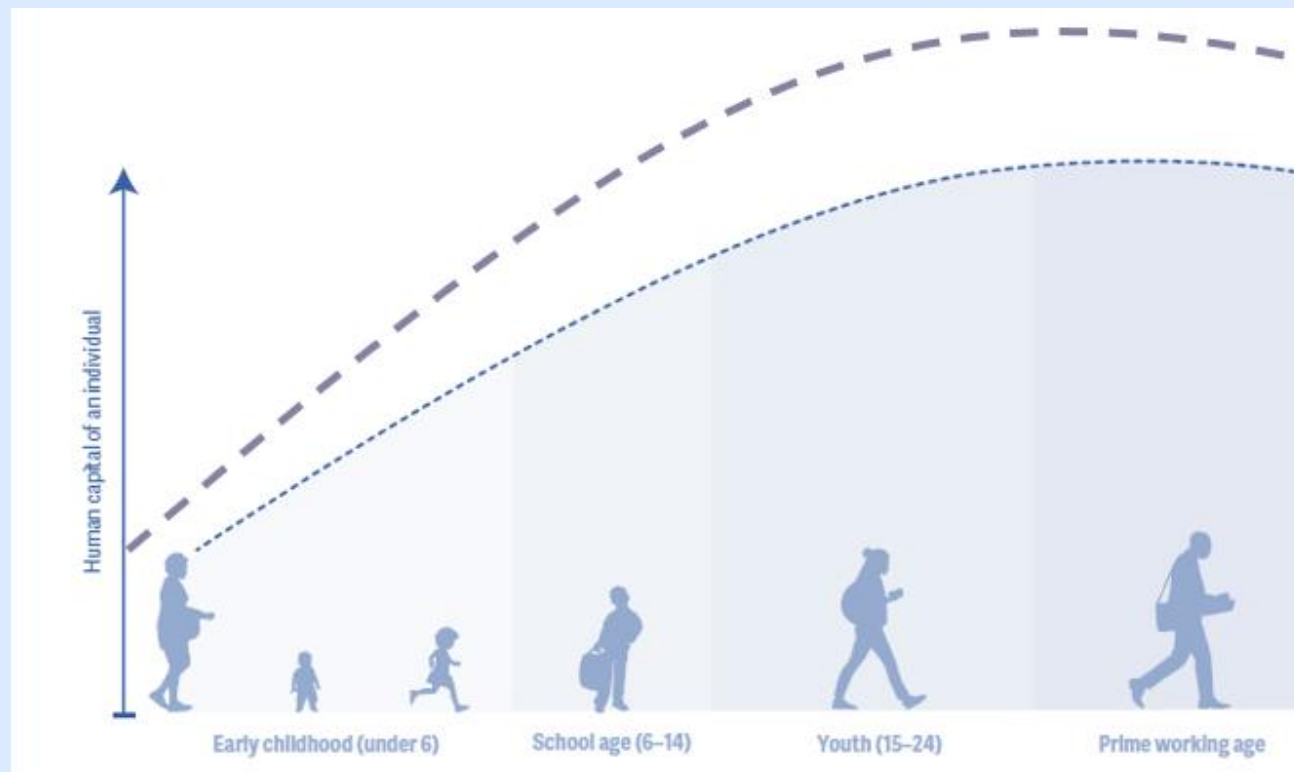


Human capital accumulation over the life cycle

James Heckman



Human capital accumulation is a dynamic process. The skills acquired in one stage of the life cycle affect both the initial conditions and the technology of learning at the next stage. (Heckman, 2005)





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Stage 1: Early childhood (under 6)

What do children need?



Nutrition



Care and affection



Stimulation

Programs at work

Early childhood stimulation (age 0-2) targeting parents: Jamaica

**Weekly home visits by
community health worker (1 hour)**

Simple materials

**Replicated in Bangladesh, China,
Colombia, India, and Pakistan**



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HIGHER IQ
(~0,6 Standard deviations)



Higher scores on
MATH and
LANGUAGE tests



More years of **COMPLETED
EDUCATION**



Lower levels of
DEPRESSION



Less participation in
**CRIMINAL
ACTIVITIES**



Better outcomes in the labor
market, including salaries
approximately **~25%
HIGHER**



Other interventions that have been shown to have high returns

HEALTH

Effects of health insurance during childhood (Medicaid coverage extension) on outcomes in adulthood in the US (Wherry and Meyer 2015, Wherry et al. 2017, Goodman-Bacon 2016, and Cohodes et al, 2016)

Immediate improvements in children's health

Improvements in education completion

Each year of exposure during ages 0-10 decreases a range of disabilities and increases likelihood of employment by 5.8 percentage points

Lower long-run health costs

EDUCATION

Evidence on the impacts of preschool in Latin America shows long term impacts on test scores and years of schooling

Argentina

- 5-year-old children who attend preschool have a 0.2 standard deviation better performance in third grade, and fewer behavioral problems (Berlinski, Galiani, and Gertler, 2009)

Uruguay

- children who attended preschool on average have completed 0.8 more grades by the age of 15 (Berlinski, Galiani, and Manacorda, 2008)



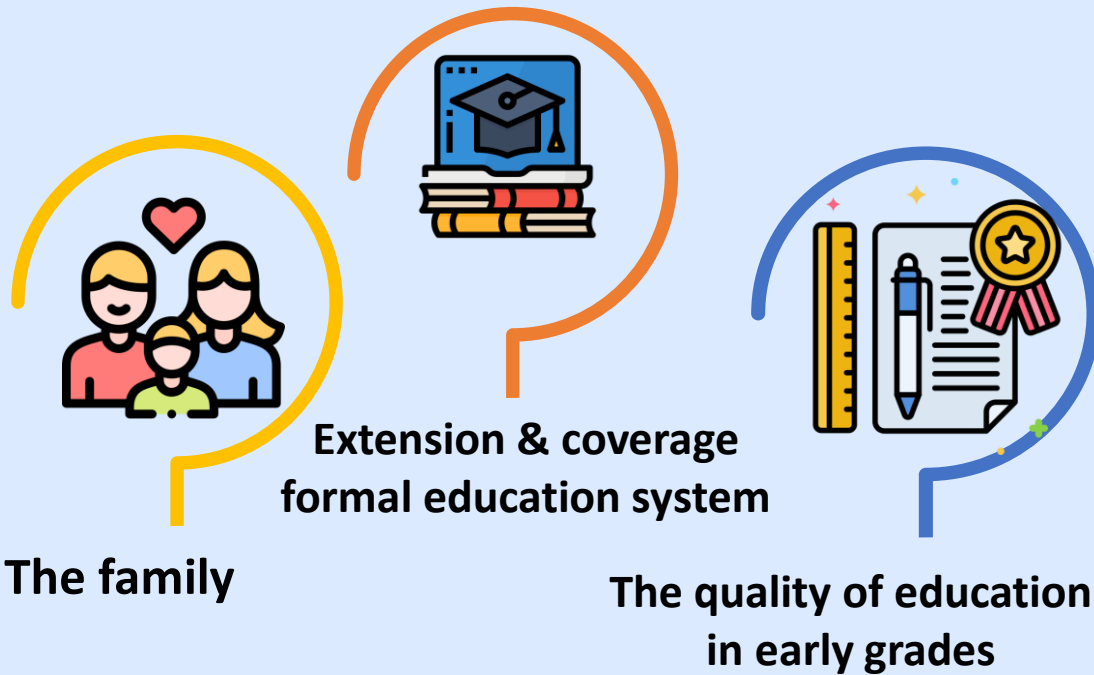
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Stage 2: School age

How is foundational learning acquired?

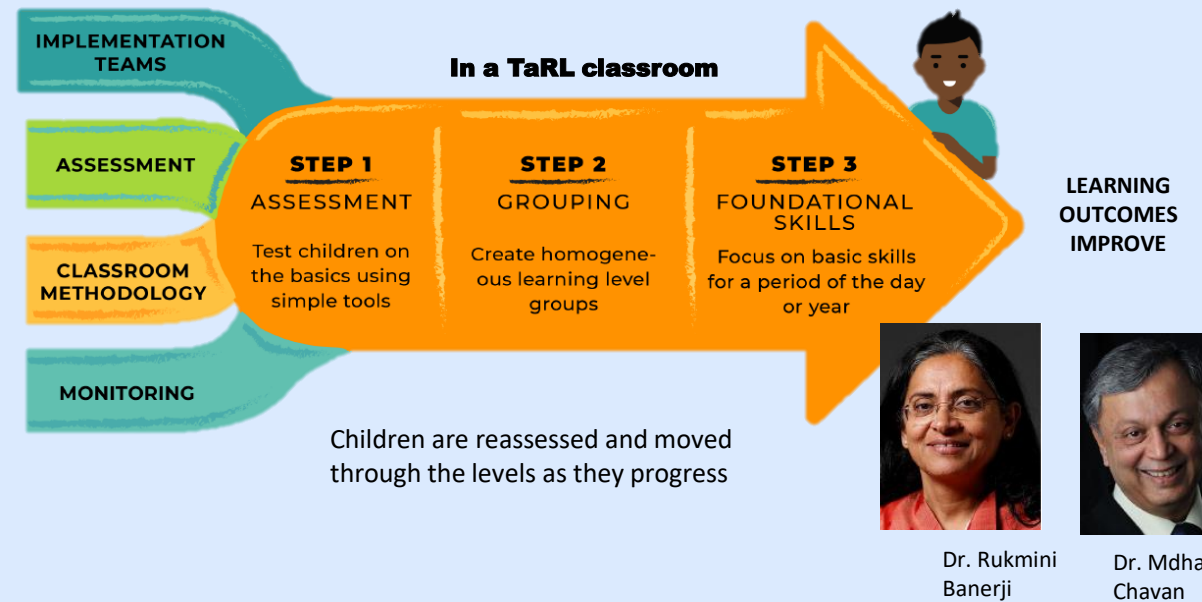


Programs at work

Teaching at the right level: India



TaRL support pieces





Effects of teaching at the right level

Delivers the equivalent of more than three years of high-quality schooling per US\$100 spent.

20-25 percentage point improvements in each round of implementation.



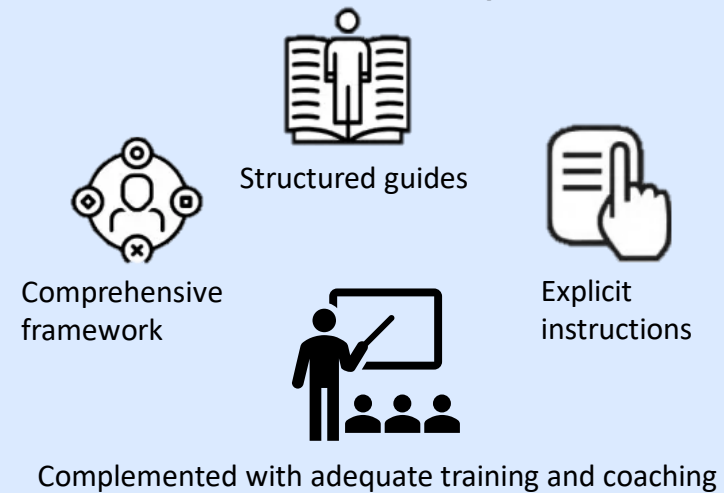


Other interventions that have been shown to have high returns

Adaptive learning (uses devices with specialized software to target lessons to each student's learning level).



Structured pedagogy interventions have proven effective at scale across multiple countries.

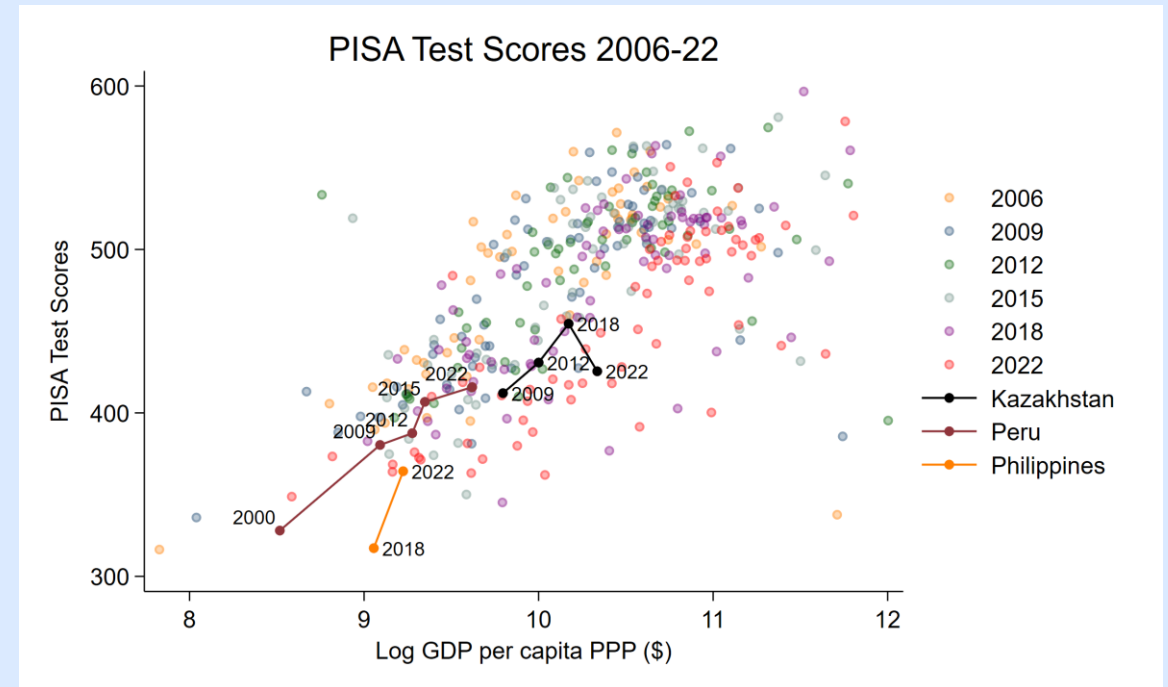
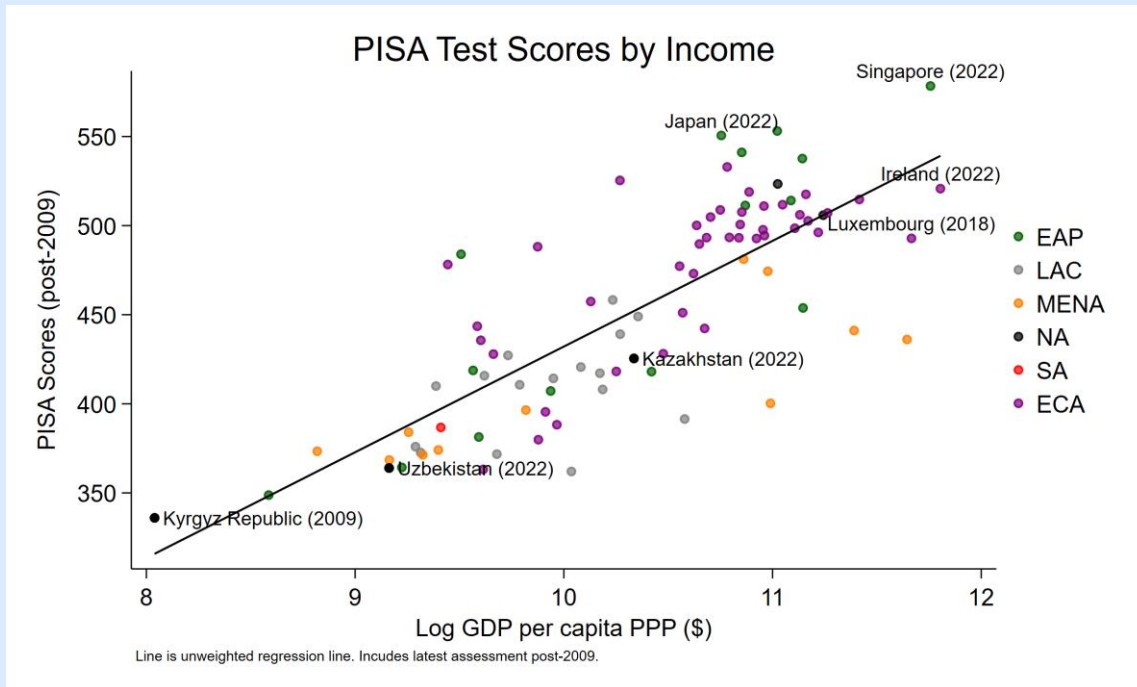




Learning Outcomes in Central Asia

Learning outcomes are close to what is expected for income-level

Progress over time but lagging behind other countries in the region





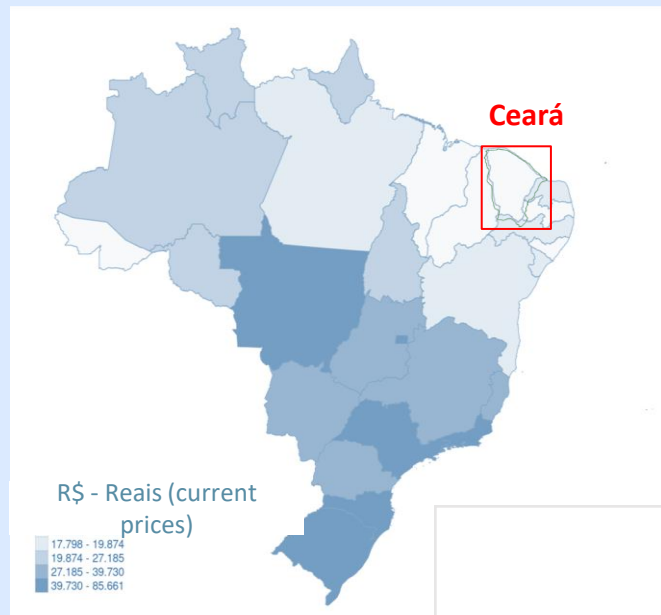
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Sobral and Ceará – Brazil: A long-term policy

Brazil - GDP per Capita by Federal Unit 2018



Source: IBGE - Nominal GDP per capita in Reais for 2018



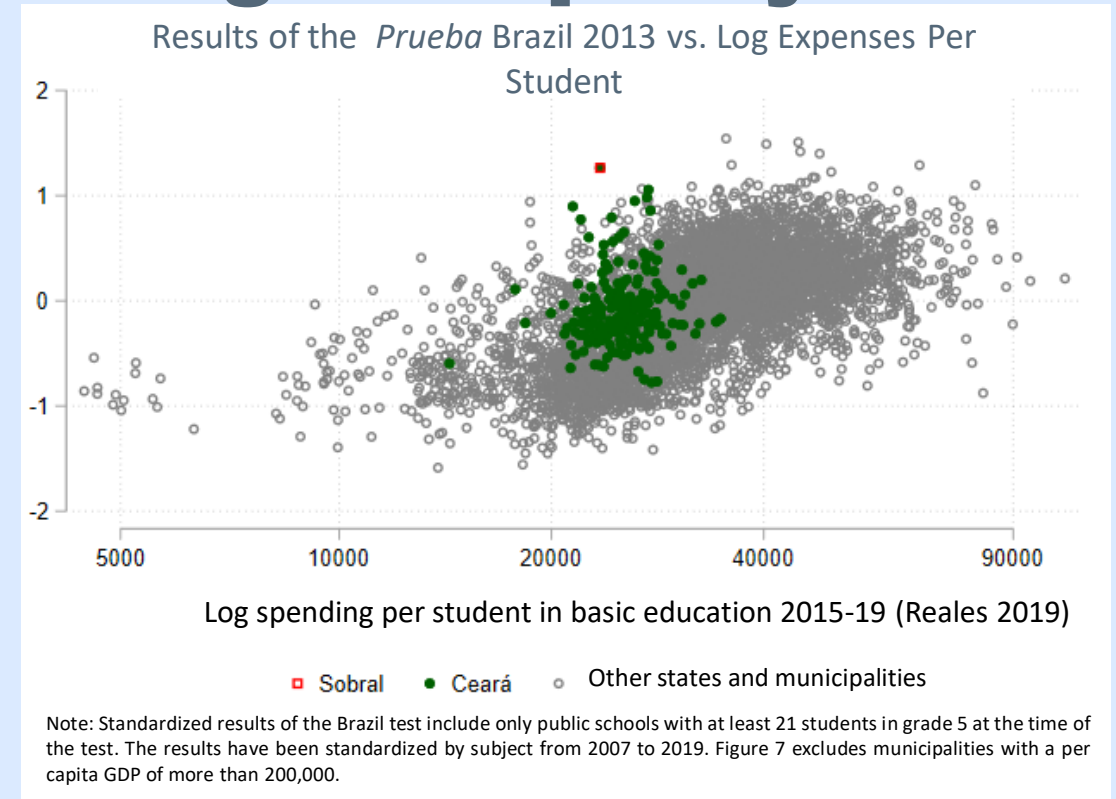
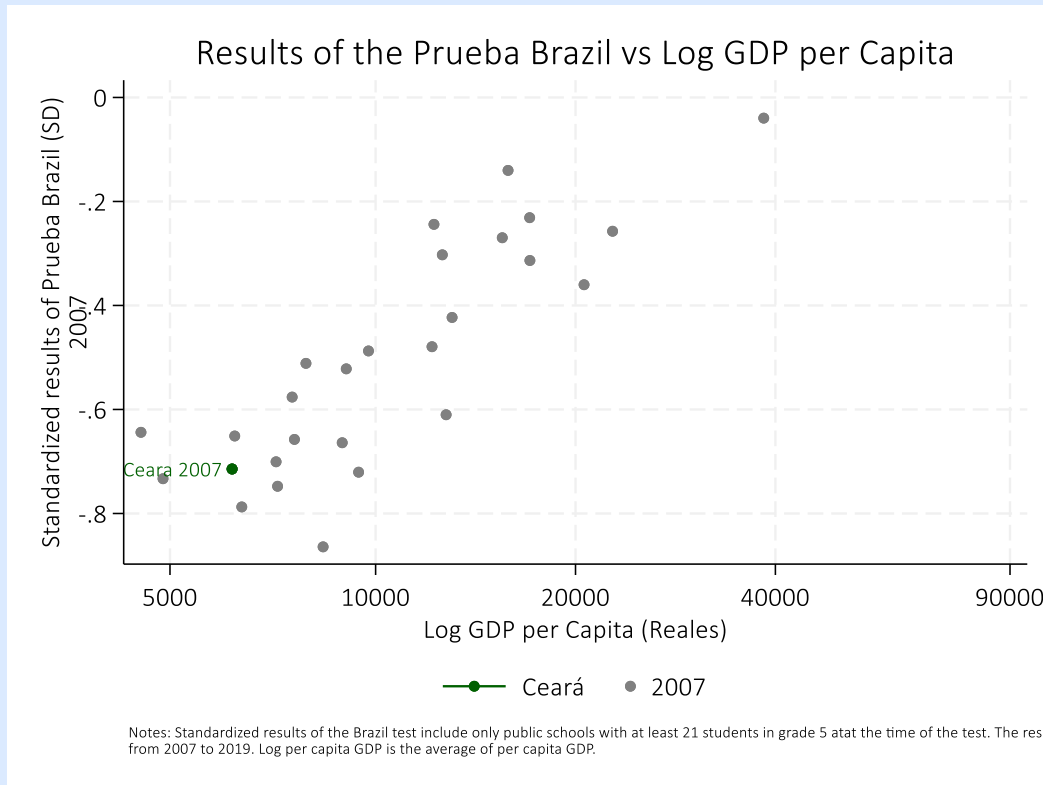


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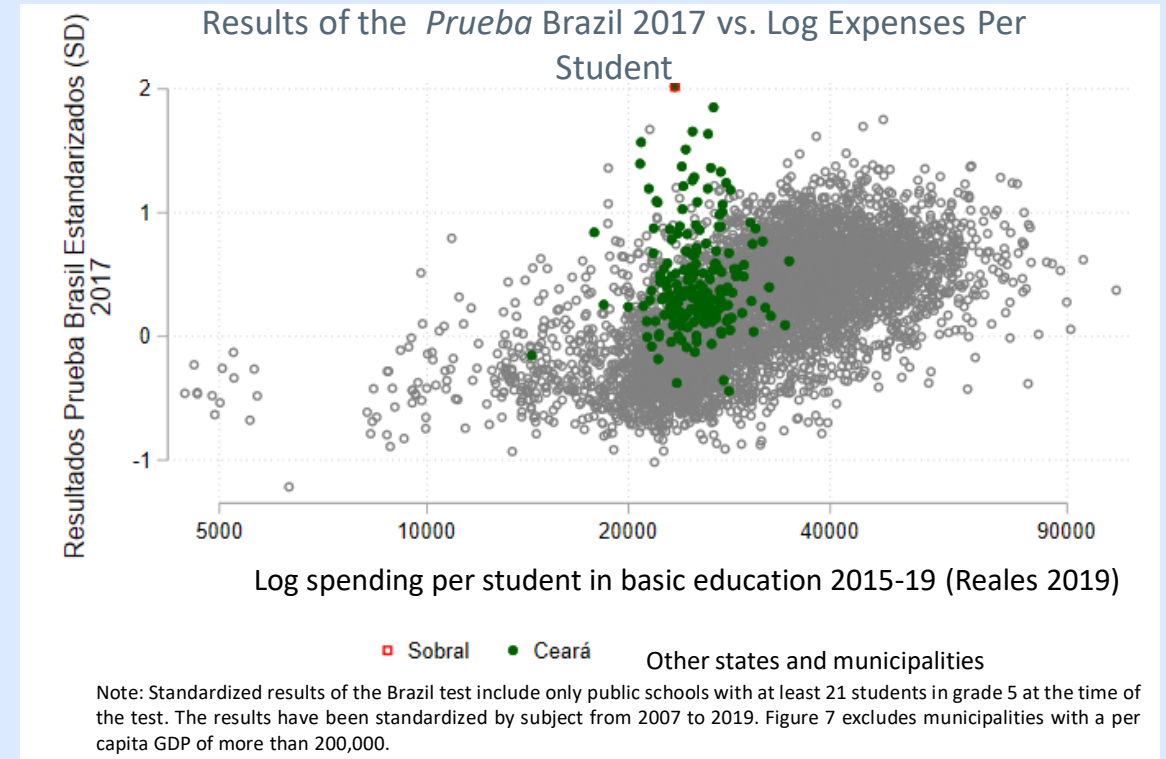
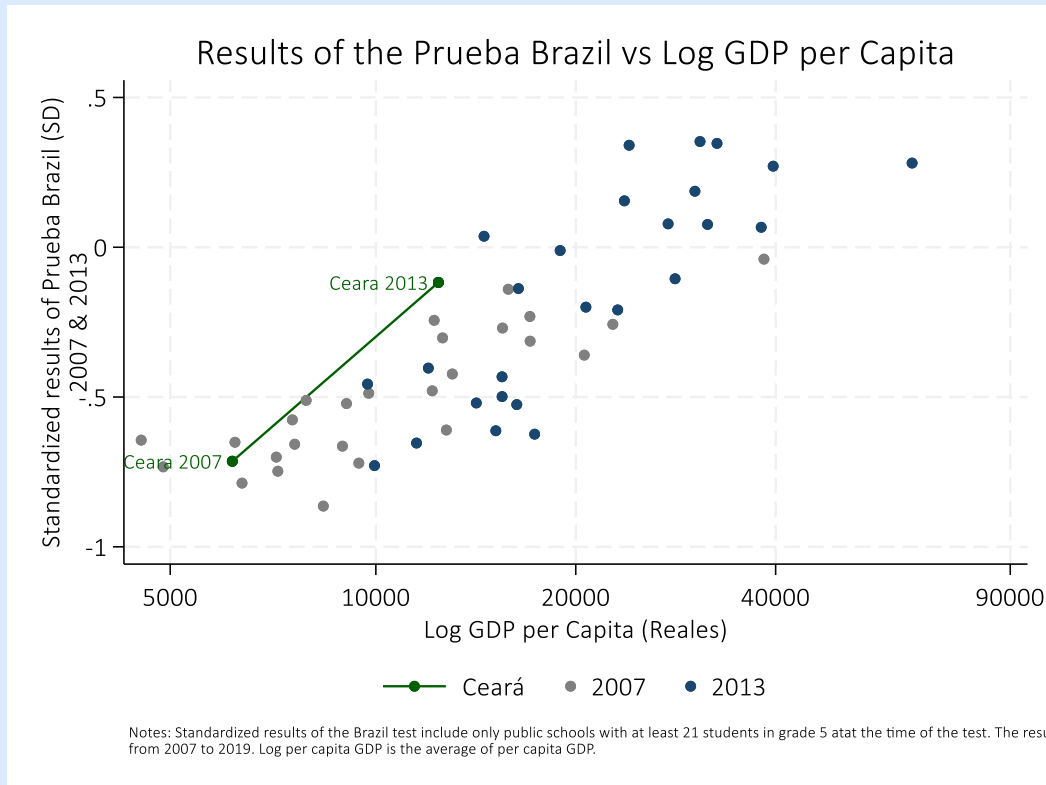
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Sobral and Ceará – Brazil: A long-term policy



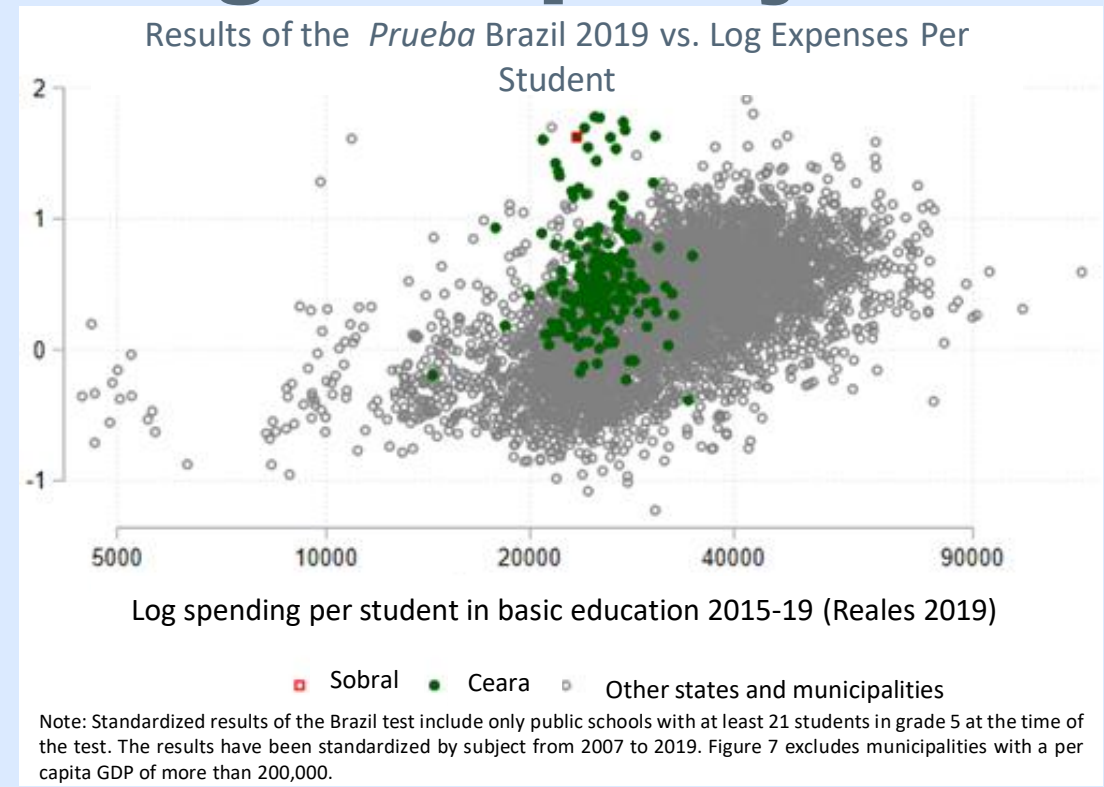
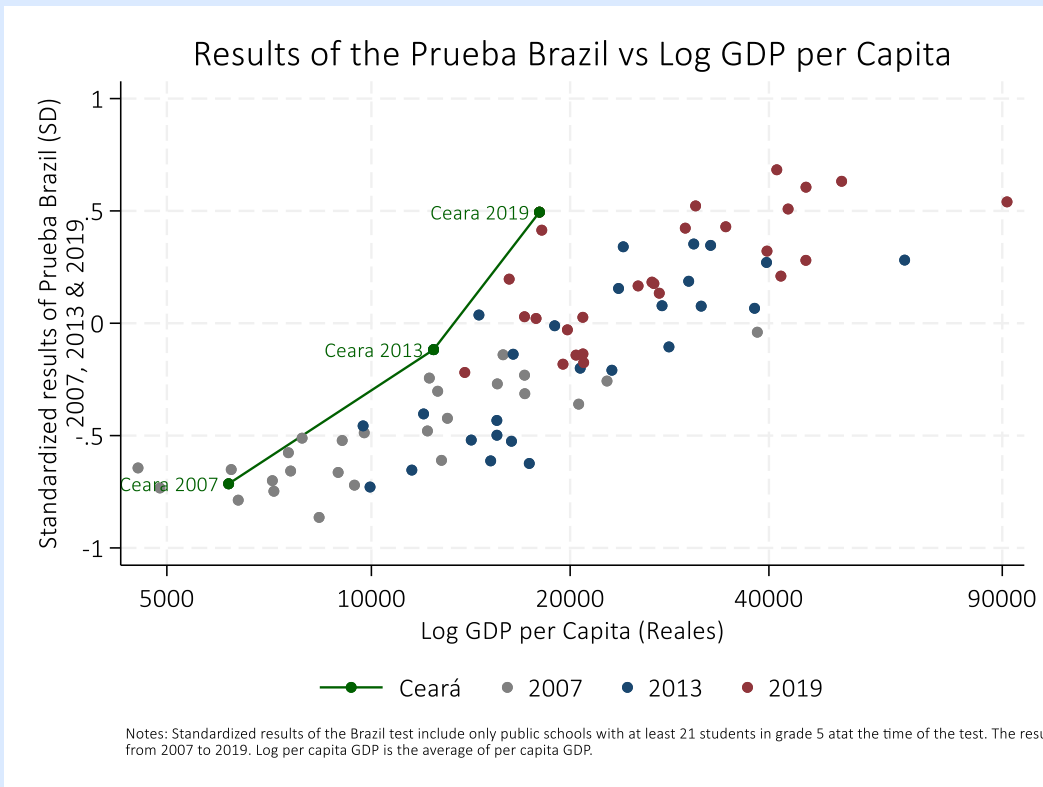


Sobral and Ceará – Brazil: A long-term policy





Sobral and Ceará – Brazil: A long-term policy



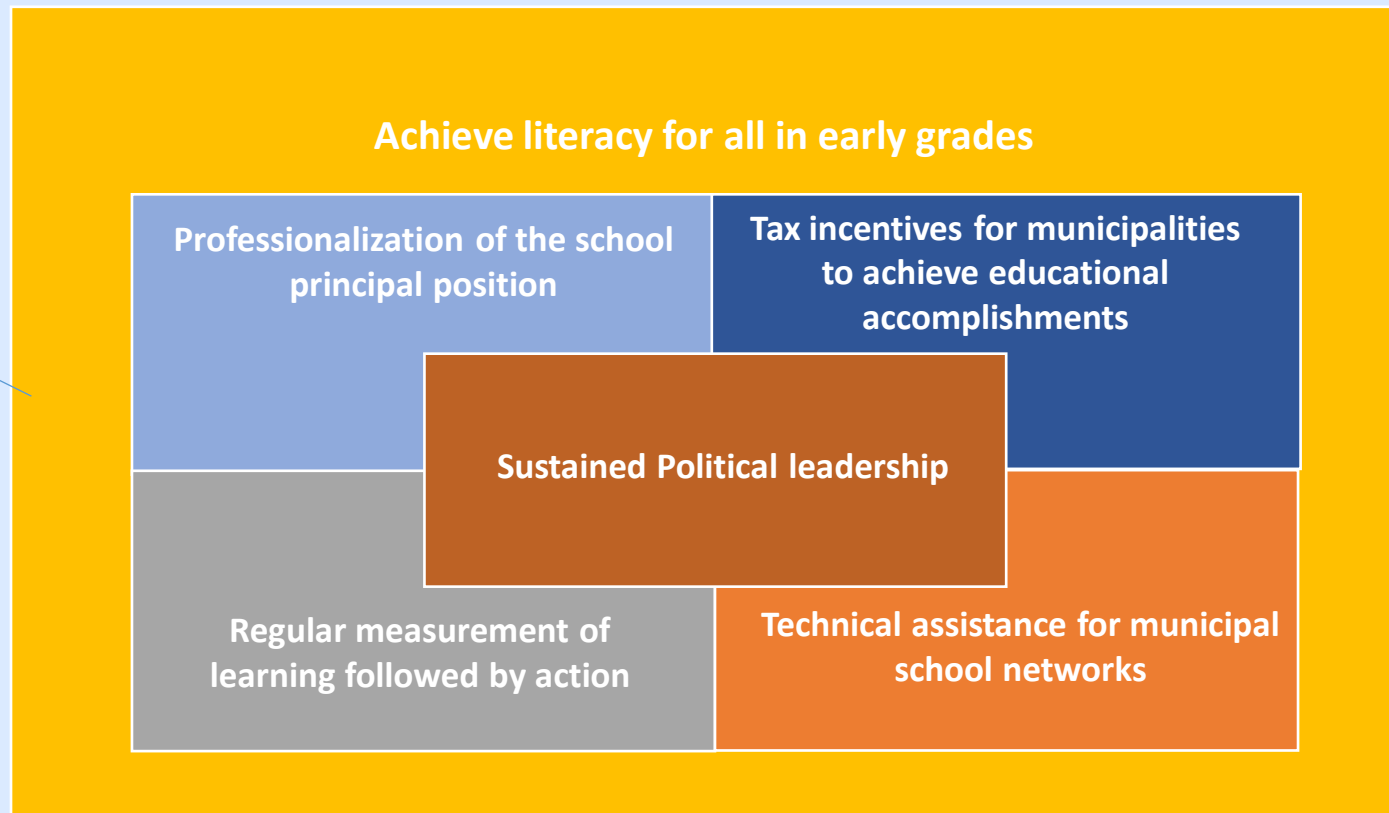
Conclusion: It is possible to improve learning - regardless of the starting point and despite financial limitations - if there is the will and political leadership, along with a coherent policy.



Ceará – Brazil: A long-term policy

Main components of Ceará's education policy for primary and basic secondary education

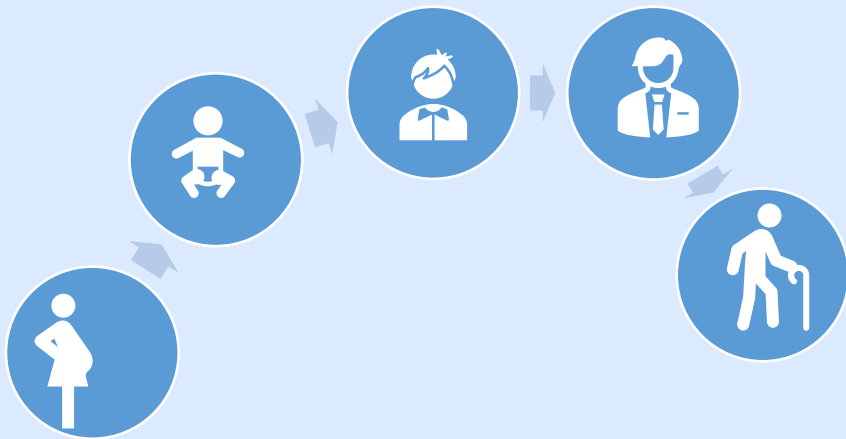
Municipalities have autonomy and responsibility in primary education



Source: World Bank based on discussion with policymakers in Ceará



Wrapping up: The life cycle approach



- Useful
- Focus on the cumulative nature of human capital
- Highlights the extent to which investments made at different stages of the life cycle are complements or substitutes



Two approaches to analyzing human capital accumulation:

The life cycle approach

Identifying the places (arenas) where human capital is built



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Looking at places where human capital is built

Claudia Goldin



“The simple human capital investment model ... does not address several important factors such as where the ... (investment) takes place (school, on-the-job, at home), who provides ... and pays for it, and what role the ‘state’ or collective plays in these matters” (Goldin, 2016).

The family

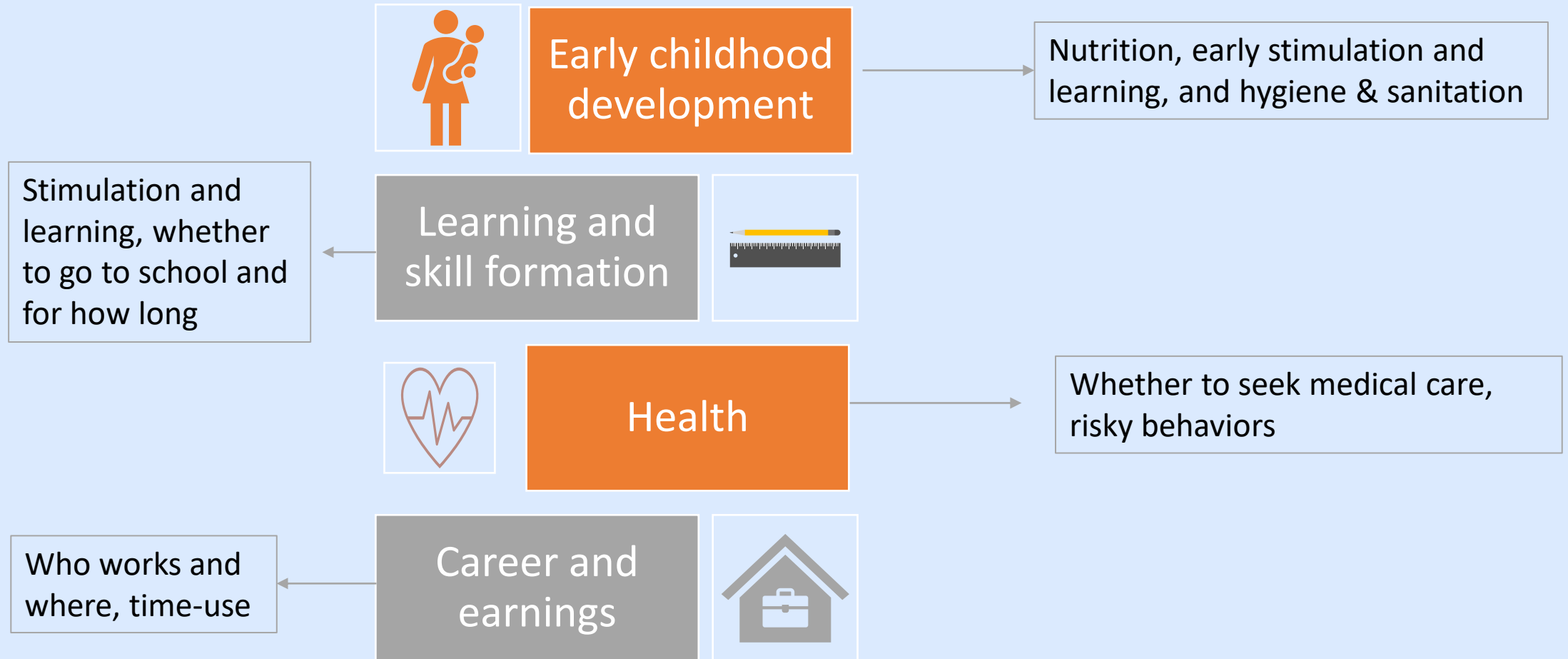
In the neighborhoods

In the workplace





Families: How much do they matter for human capital accumulation?





Families: Why do they matter for human capital accumulation?

**There are
two classes
of
constraints**

Insufficient
resources

- Children do not receive adequate & nutritious foods
- Children not taken to health providers when sick
- Children taken out of school early to join the labor market

Beliefs,
knowledge,
preferences.

- Parents may think that sons are more important than daughters
- Parents may not think that reading to young children is important
- Parents may have very high discount rates, so give greater weight to consumption now than investments in children which yield benefits in the future



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Families: Conversion of inputs to human capital

American Economic Journal: Applied Economics 2012, 4(2): 247–273
<http://dx.doi.org/10.1257/app.4.2.247>

Cash Transfers, Behavioral Changes, and Cognitive Development in Early Childhood: Evidence from a Randomized Experiment

By KAREN MACOURS, NORBERT SCHADY, AND RENOS VAKIS

Cash transfers to families improved language, cognitive, and socio-emotional development of young children in Nicaragua

- Relieved the budget constraint: families spent more on nutritious foods, books, toys.
- Led to behavioral change: parents more likely to read to children, provide micronutrient supplements, deworming.





Families: A menu of options

Inputs

Cash and income

In-kind transfers

Conversion of inputs into human capital

Information and counselling

Convenience

Preferences

Conditions and timing for transfers

Counterbalancing incentives:
childcare, gender-targeted
programs

Increasing intrusion, difficulty of scale

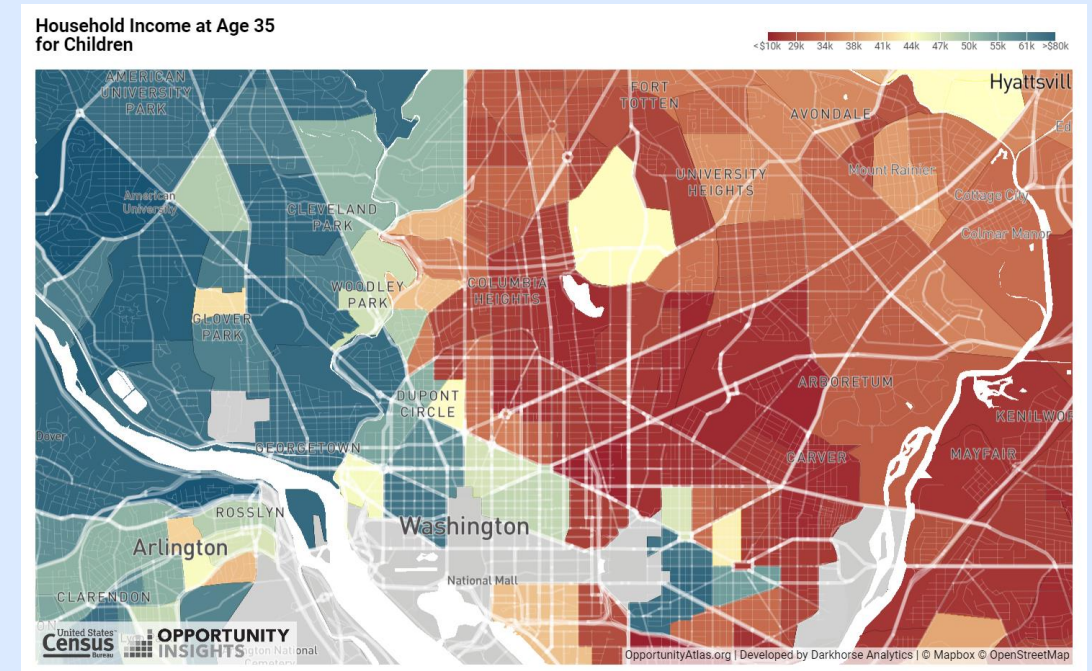
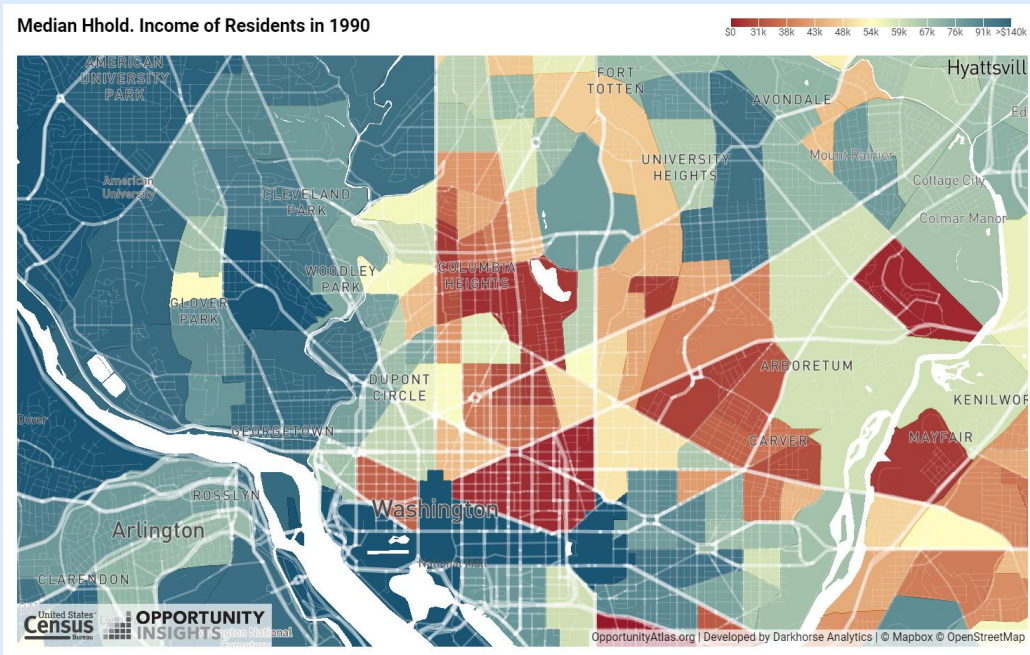


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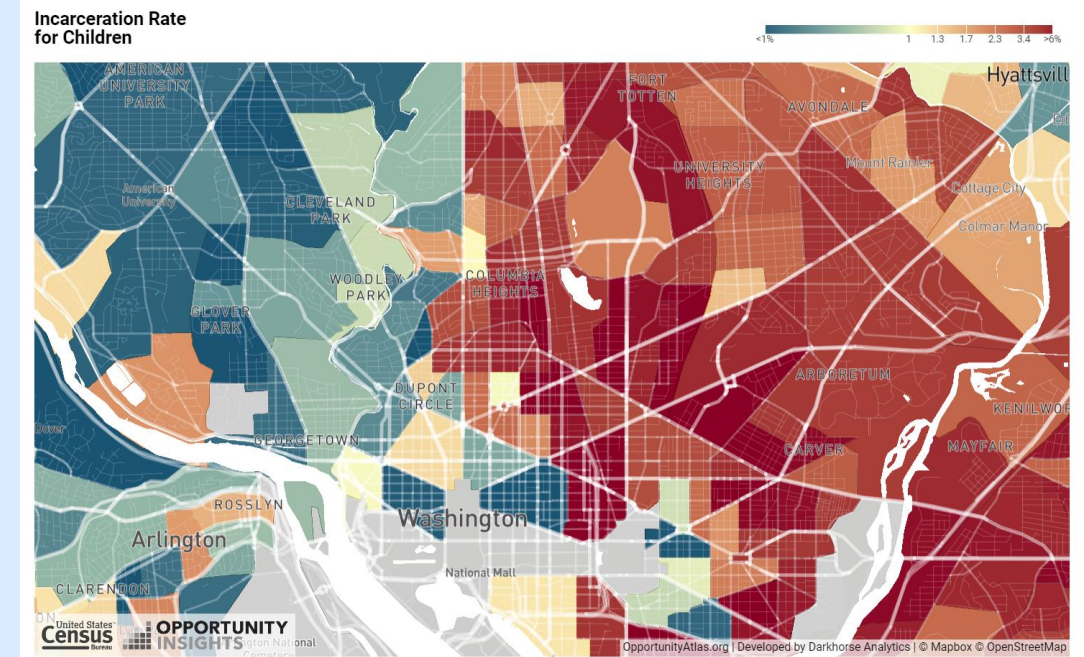
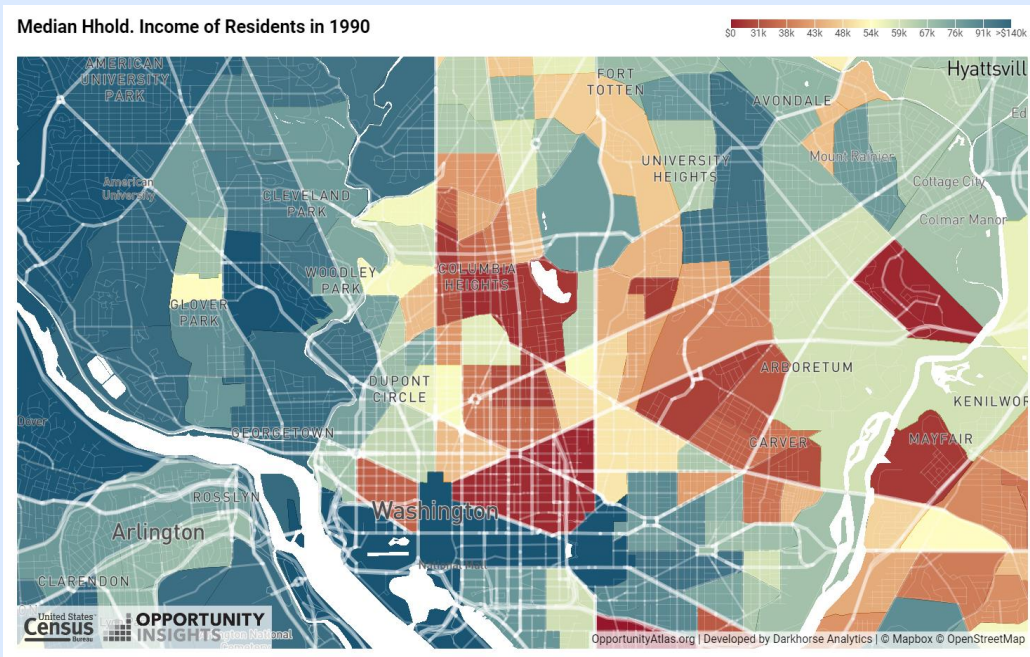
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Neighborhoods: Where you grow up matters





Neighborhoods: Where you grow up matters





Neighborhoods: how much do they matter for human capital accumulation?



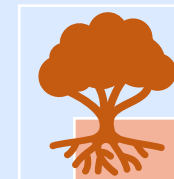
Social interactions

- Peers
- Connections beyond family: neighbors, community members, local authorities
- Crime, violence & conflict



Infrastructure

- Access to and quality of health and education services
- Connectivity
- Other infrastructure



Environmental

- Air pollution
- Water quality
- Lead exposure

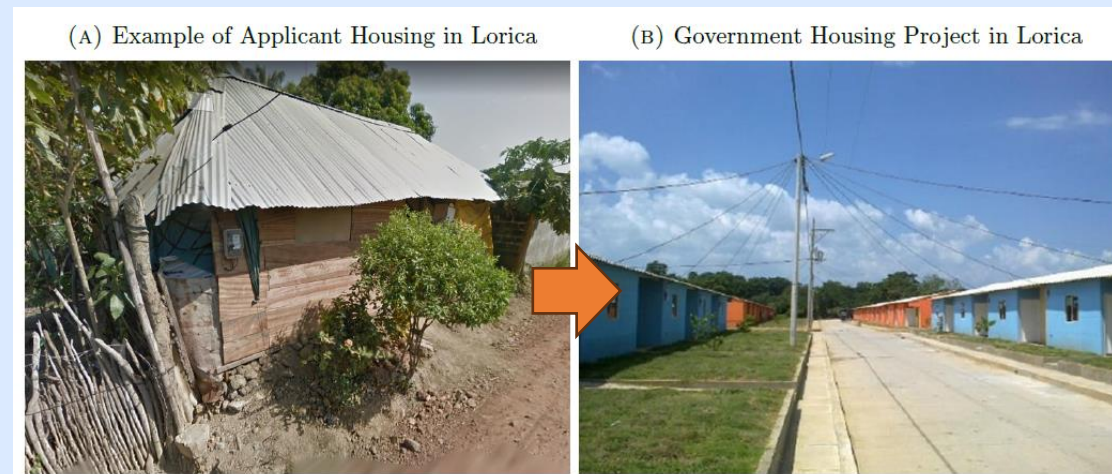


Neighborhood HD policies: Two approaches

1) Improve the neighborhood

2) Facilitate movement to high-opportunity areas

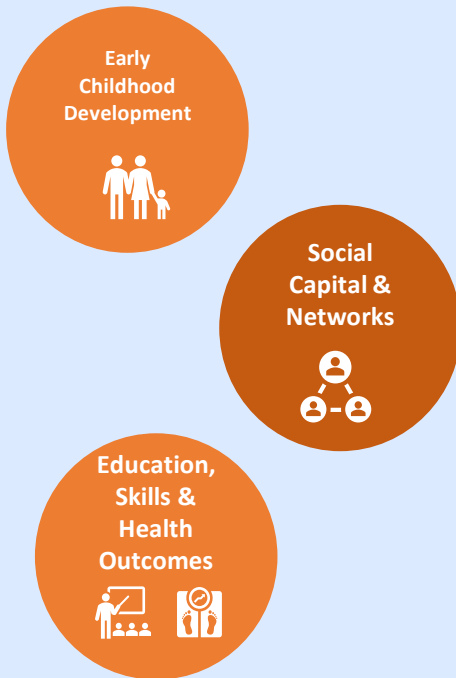
House lottery, Colombia



(A) Example of Applicant Housing in Lorica

(B) Government Housing Project in Lorica

Test Scores (+0.09sd)	High school graduation (+ 7pp)	Years of education (+0.5yrs)
Better schools (+0.02 school VA)	Less Air Pollution (-20%)	Crime index (-0.05sd)



Source: Camacho et al. 2024



Neighborhoods: a menu of policy options

Improve neighborhoods

- Reduce crime through policing & efficient criminal justice systems
- Improve access to schools and health care services by improving transportation & road infrastructure
- Limit air pollution and improve water quality through environmental regulations and incentives
- Improve health outcomes by increasing access and quality of water and sanitation

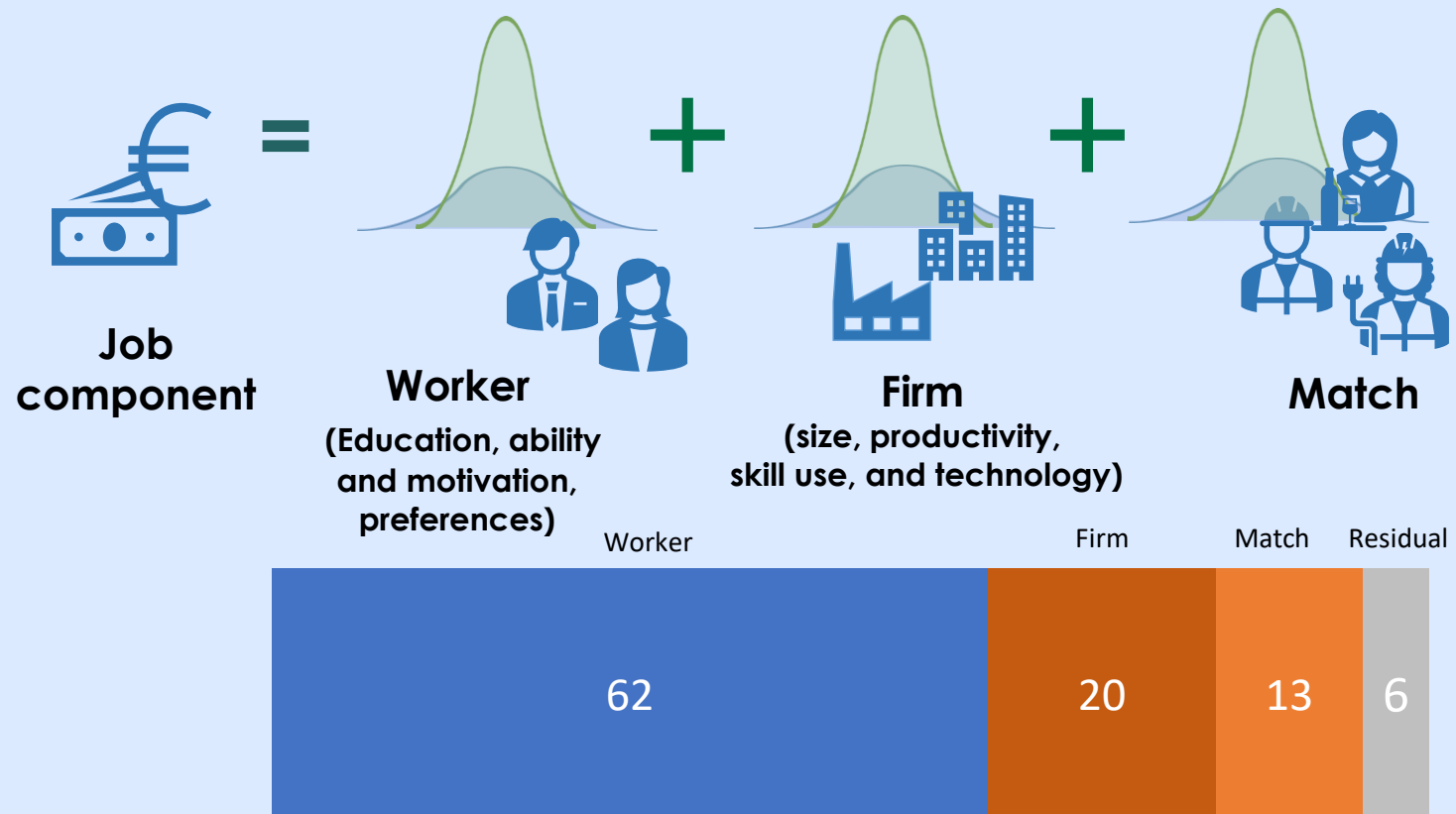
Facilitate movement

- Provide housing subsidies
- Increase access to affordable housing in better neighborhoods
- Eliminate barriers to movement

Government responsibility: Local, regional, national



Firms: How much do they matter for human capital accumulation?



Source: Authors calculations from AKM models. Sample includes Portugal, Germany, Denmark, Brazil, Estonia.



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How does human capital accumulate in the workplace?



Explicit training provided
by firms



On-the-job learning

Why does on-the-job learning differ across firms?



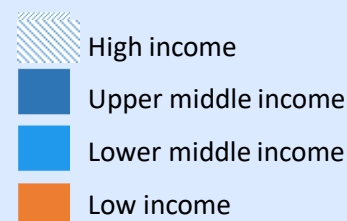
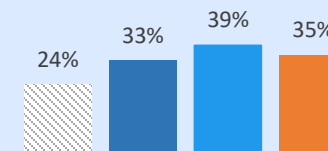
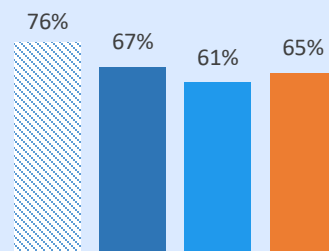


Why is there not more human capital accumulation at work in LDCs? (i) Too many people, especially women, outside labor force

Population 15 – 64 years old
3.56 billion

Labor Force: 2.35 billion

Outside labor force: 1.21 billion



38%

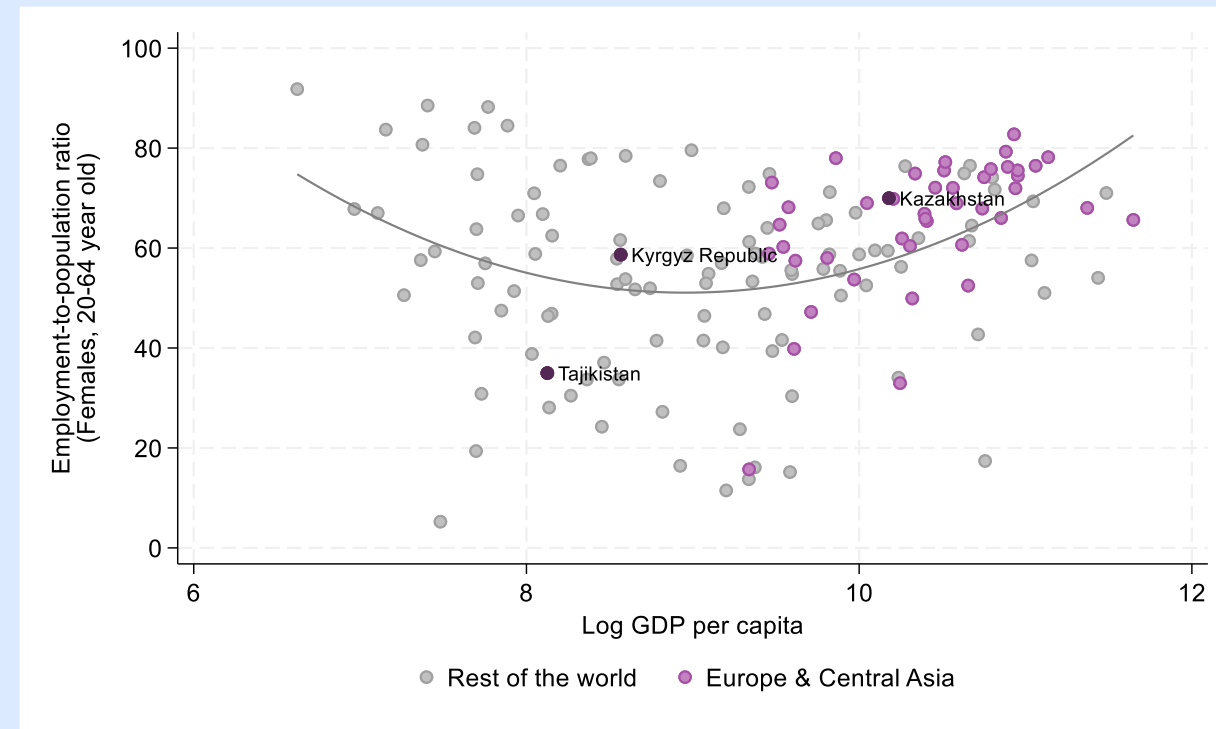
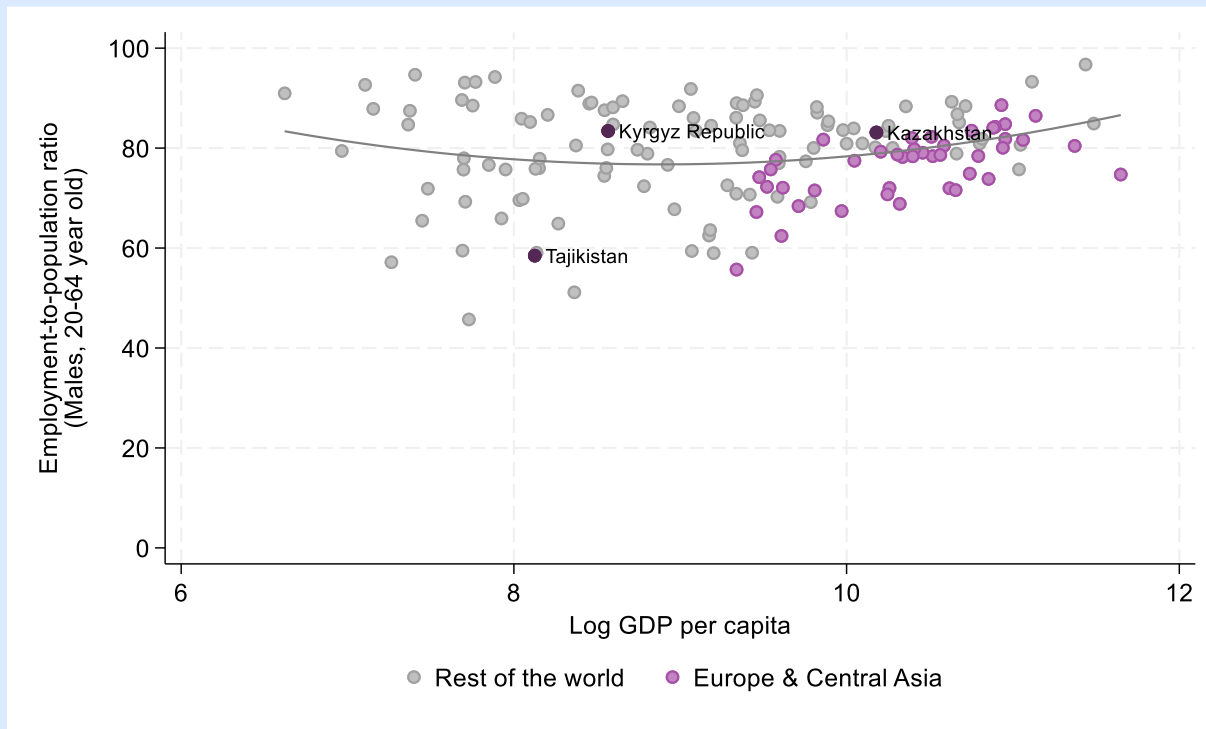
Share of working age population not participating in the labor force in LIC and MIC

52%

Share of women in working age population not participating in the labor force in LIC and MIC



In Central Asia, the share of working age population employed is between 10-25 pp lower for females than males



Source: ILO data



(ii) Not enough human capital accumulation because too many people in self-employment or in micro firms

32%

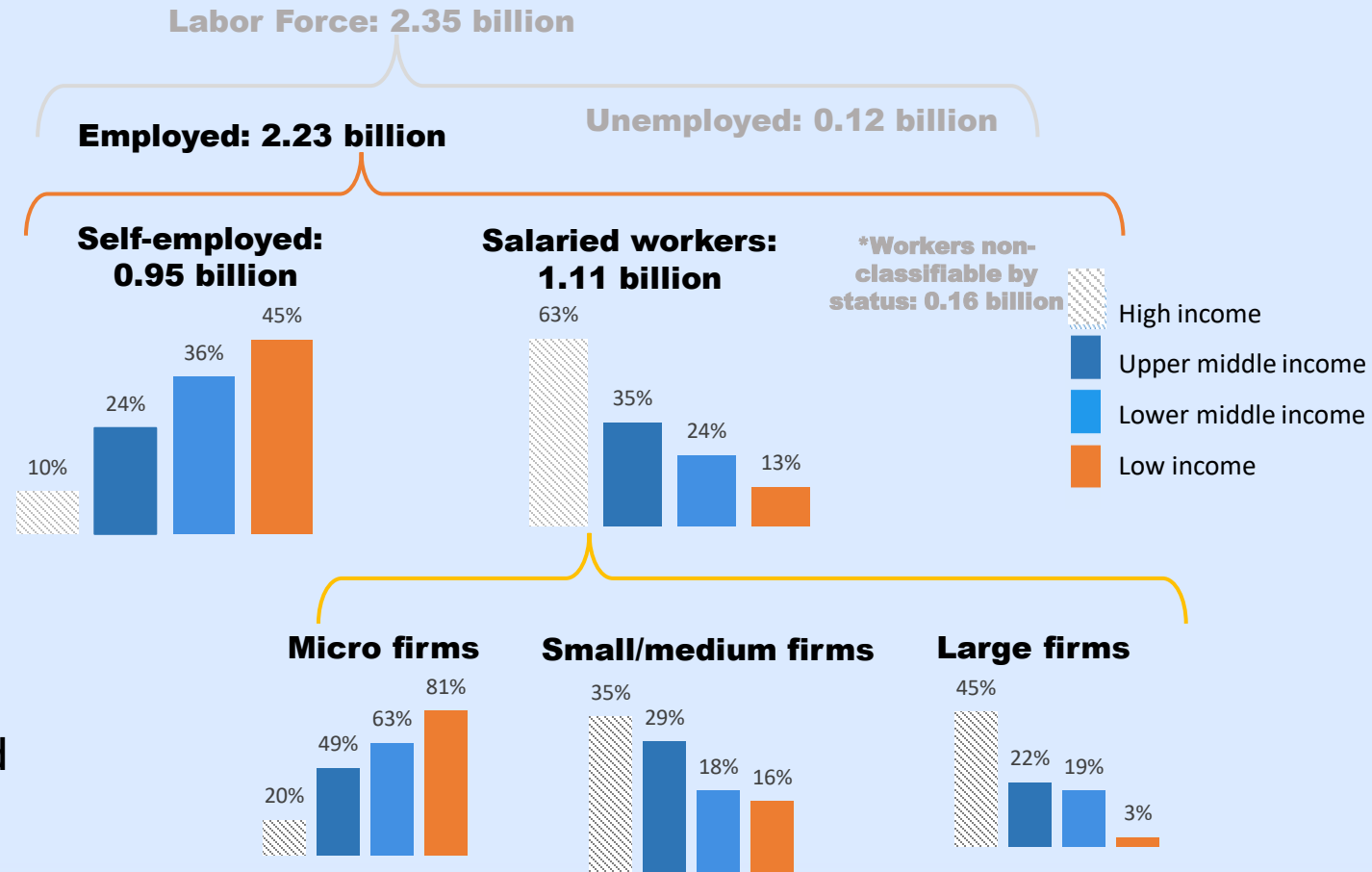
Share of working age population in self-employment in LIC and MIC.

25pp

Difference between share self-employed in LIC and MIC

60%

Share of employed population working at micro-firms in LIC and MIC

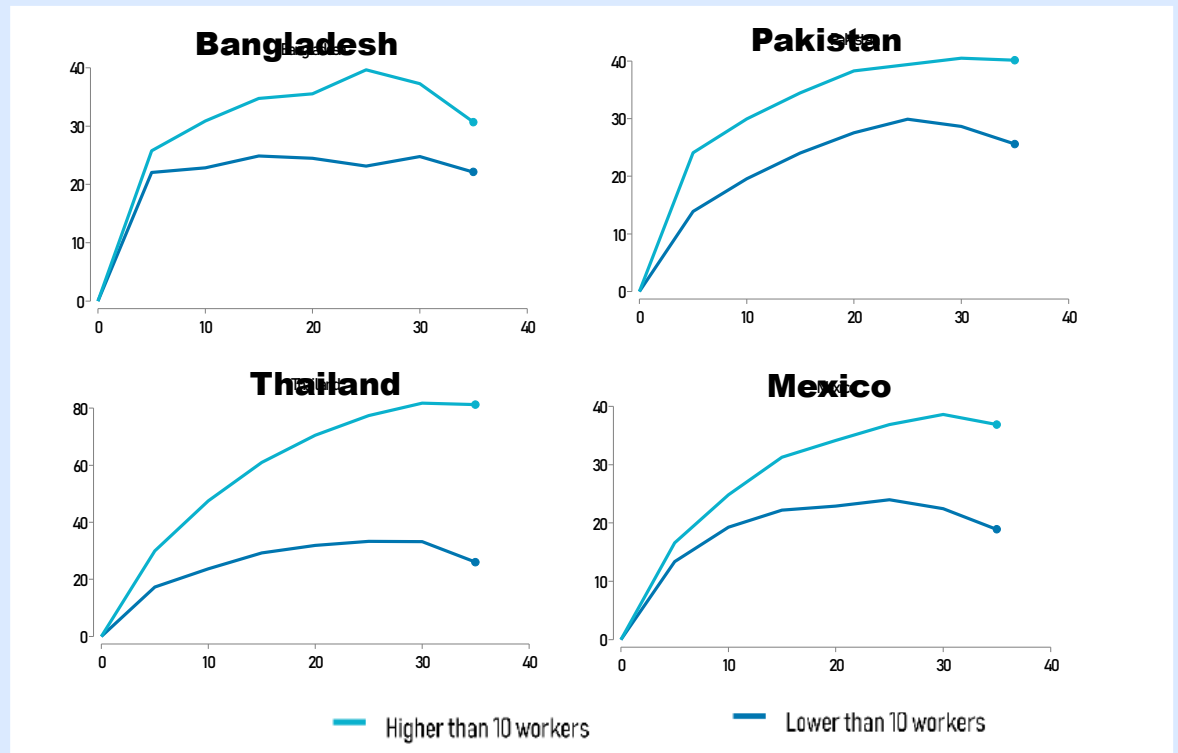
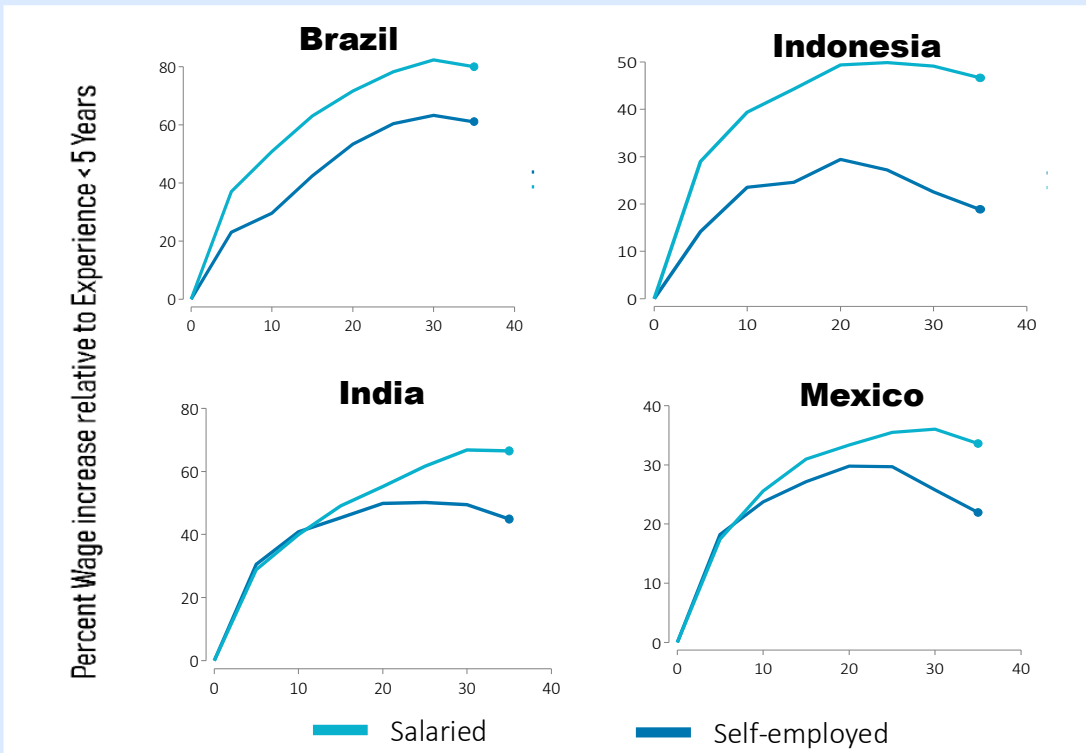




Returns to years of experience

By employment type (self-employed vs salaried workers)

By firm size (lower and higher than 10 workers)





Firms/labor markets: A menu of policy options

Enhance human capital in current jobs

Demand driven training programs

Job search assistance

Life skills

Promote a “human capital-friendly” employment structure

Remove bad incentives in labor regulations, social insurance, and tax systems exemptions

Apprenticeships

Expand STEM, vocational training, and other forms of upper-level schooling

Optimize future human capital formation

Structural reforms

Change institutions (including those that determine the way labor markets reward workers)

Short-term → Medium-term → Long-term



Wrapping up: Human capital accumulation in places



- Useful
- Focus on the fact that the accumulation of human capital is determined not only by individual choices, but also by the environment in which these choices are made
- Expands the set of programs and policies beyond those that typically receive attention



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Putting it all together

- Human capital is key to understanding productivity differences across countries, and income differences across individuals within a country.
- It is built over the life cycle in three places: families, neighborhoods, and firms.
- Understanding of the dynamics of human capital formation in these places can expand the scope for policy analysis and design.
- The World Bank is focusing on this issue in its 2025 flagship report on human development—**Please join the conversation!**